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5 **Title of Invention**

Method, apparatus and program for pricing, transferring, buying, selling and exercising of freight cargo options on the World Wide Web.

Cross-reference to related Applications

10 Not Applicable.

Statement regarding federally sponsored research or development

Not Applicable.

15 **Reference to a microfiche appendix**

Not Applicable.

Technical Field

20 This invention advantageously relates to a method, apparatus and program for pricing, transferring, buying, selling and exercising options for freight services using the World Wide Web interface.

Background of the Invention

The present invention relates to the field of originating, pricing, transferring, buying, and selling of options for freight services on the Internet using a web based interface in the form of an exchange model. Basically, the exchange model, which primarily consists of the web interface, is installed at a server which is then link to individual freight carriers' system that wish to provide such a service. Freight fees, particularly in air-cargo are constantly changing as well as rising, with availability subject to present economic situation. Unfortunately at this time, there is neither system nor device for managing the risk of these fees. There are also no exchanges that provide a market for these options to be sold or bought or written if they should come into existence. By using an option, one is guaranteed the exact remaining payment when one wishes to exercise the option. Options contract for freight cargo has to be standardised in terms of units, route and frequency although not perfectly similar. The providers of freight services will also benefit since the need to accurately forecast supply has diminished since the market participants are deciding all the actual demand. Carriers will also be more informed and profitable since option premium payments are up-front payments enhancing cash flow where the clients decided not to exercise them.

Option contracts ("Option"), are known in other fields as a way of locking in a particular purchasing price for a given commodity. Because of this, options can be used by buyers to minimise the risk of rising prices and sellers

for falling prices. One of the most widely known types of options is the covered option to purchase stocks or company securities. The issuer of this type of option owns a number of shares of a particular stock. The buyer of this type of option has the right to purchase from the issuer of the options, a predetermined

5   number of shares of the stock, at a predetermined price, at any time before the option expires. This "style" is usually called the American Option while the European Option means, the buyer can only exercise at a fixed date as set out in the terms of sale of the option.

As explained earlier, there has been no acceptable way of minimising the

10   risk of fluctuations in freight services cost and as far as l am aware, options to purchase or pay for freight facilities have never been sold or traded any where in the world. Moreover no system has been developed for determining prices for options for freight facilities and keeping track of the sale and exercise of these options. The current system uses a combination of hurdle rates, bid rate and cut-

15   off price which has to be determined by the manager. Different rates are used to manage different 'desperation' points as the time approach for the carrier to depart.

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Brief Summary of the Invention

It is an object of this invention to provide an innovative way to manage freight

fees by providing the method, apparatus and program for pricing, buying, selling

5   and exercising options to pay for freight cargo facilities. This invention details

the framework to cover four sectors, freight for space, air, rail and sea

transports.

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Description of Invention

The Inventor has developed a method of utilising a telecommunications service

system host computer connecting to various terminal system including

Automatic Teller Machines (ATM) which is linked to a public telephony system

5   network or through the Internet where applicable. The design is a modular web-

based application that utilises the HTTP protocol that has been serving the

Internet community since the emergence of the first websites. It is a 3-tier

architecture and a very thin client that makes maintenance easy. The three layers

are the Microsoft SQL Server 7.0 as the database server, a set of ActiveX

10   components powered by the Microsoft Internet Information Server 4.0 and

hosted by an NT Server 4.0 at the middle tier, and clients using web browsers at

the front end. The combination of these is a secure, reliable and easy to maintain

system in which a client/customers only needs a web browser and

intranet/Internet connection to access the system. In addition, the HTTPS

15   protocol could be used to support secure transactions. Implemented within an

organisation, users can connect to the system using a computer in the same

network or using a telephone line through the Dial-up connection, both using

the TCP/IP protocol. Connected to the Internet, a user can reach the system from

anywhere in the world.

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Thus according to one embodiment of the invention there is provided,

a process system comprising:

5   receiving an incoming request from a terminal through the public telephony

system network via a modem or through the Internet or any connecting interface

suitable for this purpose,

authenticate the users,

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respond with the appropriate welcoming message, inputting forms and wait for

a response,

prompted the user with the information provided

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after inputting and registering the desired information, this will be then sent to

the central controller for processing. The sending process is through a telephone

line or through the Internet interfacing with a modem. The central controller will

query responsive carrier's system, wait for their replies and will process the

20   information and sent a reply/response through the same way back to the user.

The above process is repeated again until the user is satisfied with his results.

The system is also able to process the option price for the freight services and rank results on its desirability. Stored all inputted data and maintain a database for all actions taken during its process and those instructed by the users, for example purchasing the option or selling it later. In line with the database concept, it can also do search, match, rank as well any secondary functions within its program.

The present invention means the possibility of a new way to manage freight costs, to lock in the cost of freight for clients, valuing the services using options and a means to execute using an external communicating devices such as a terminal. It will also provide carriers an opportunity to seek "risk adjusted" self-financing by reaching their potential clients at a reduced cost. For these clients, an opportunity to minimise but not eliminate the risk of freight services availability as well.

Brief Description of the Drawings

Figure 1. Depicts the overall system block diagram of a preferred embodiment of the present invention.

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Figure 2. Depicts the block diagram of the central controller

Figure 3. Depicts the block diagram of the agent terminal and Internet connections.

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Figure 4. Depicts the flow chart depicting initiations of a transaction in the agent terminal or through an Internet connection.

Figure 5. Depicts the flow chart depicting the operation of controller and the

15   final phase of operation of agent terminal.

Figure 6. Depicts a flow chart depicting the operation of the when an option is exercised.

20   Figure 7. Depicts a flow chart depicting the operation of an option being sold, marketed to be sold or match to be sold.

Figure 8. Depicts the WWW page interface format.

Description in detail of the preferred embodiments

The present invention is directed to a system to determining an appropriate price

for options to purchase freight services and facilitating the sale and the

5   exercising of the options.

The traditional methods of determining prices for options on stocks and

traditional commodities are not suited in the freight services market. To begin

with (1) the services is only supplied by a limited of companies; (2) the product

10   is not completely fungible because certain potential users may prefer certain

carriers because of loyalty programs or simple because the destination is not

accessible by other carriers and (3) the supply of the product is small because

only a limited number of placement/space are available on any given time (4) in

examples such as space and air, such services is certainly limited by weight as

15   well as by size.

FIG 1 is an overall system block diagram of a preferred embodiment of the

present invention. In this embodiment, central controller 20 is linked up to at

least one freight agent ('agent') terminal 30 or registered user 30. This linked up

20   can also be through the Internet through the Internet Service Provider (ISP)

Gateway 6 or a network system whichever is preferable by the seller/provider at

that time depending on economic costs of the system.Two terminals depicted in

FIG 1 but any number of agent/users terminals can be used including those

linked via the Internet 5. The link between the terminal 30 and the central

controller 20 does not have to be a physical link, it can, for example be a link

via a modem, as described in the subsequent description, or any other

telecommunication link including wireless systems. An option transaction can

5   be initiated from any one of the agent/users terminals 30. The information

required to implement the transaction is passed until the transaction is complete.

The central controller 20 keeps track of all transactions including transactions in

the system. Upon receiving a request, it will query all the participating carriers'

cargo system in 10 for their interest, which may be automatic or manually

10   controlled. This system is designed mainly for air cargo facilities which is

dependent on passengers loading as well hence it will also query the Flight

Reservation System "A" at 11. "A" refers to an unique system for different

carriers. It must be understood for periods such as one year in advance, both

systems at 11 and 10 will probably not able to response hence greater

15   dependence will be placed on other variables such as forecasting results from

historical data which are found in both systems. The system depicted in FIG 1.

may be embodied in hardware specially provided to implement the present

invention. Alternatively, the system may be implemented using the

infrastructure that already in existence such as using the ISP Gateway 6

20   interface.

FIG 2 is a block diagram of a preferred central controller 20. The central

controller includes a CPU 21 which performs the processing functions of the

controller. It is also includes a read only memory 22 (ROM) and a random

access memory 23 (RAM). The ROM 22 is used to store at least some of the

program instructions that are executed by the CPU 21 such as portions of the

operating system or BIOS and the RAM 23 is used for temporary storage of

5   data. A clock circuit 24 provides a clock signal. The use of a CPU 21 is in

conjunction with ROM and RAM and a clock circuit. The central controller 20

also includes a communication port 25 which enables the CPU 21 to

communicate and query with devices external to the central controller 20. In

particular the communication port 25 facilitates communication between the

10   modem 26 and the CPU 21, so that information arriving from the modem 26 can

be processed by the CPU 21 and the CPU 21 can send information to remote

location via the modem 26. Modem 26 is mainly use to connect to the Internet

to reach the Cargo system 10 and agents/users' terminals 30. The CPU 21 can

also store information to and read information from, the data storage device 27.

15   This data storage device 27 includes an option database 27a and a customer

database 27b, which are described below. In addition, it includes transaction

processor instruction 27c which can be read by and executed by the CPU 21,

thereby enabling the CPU 21 to process transactions. While FIG 2 depicts

separate option and customer databases, a single database that incorporates both

20   of those functions may be used. This is described as mainly a Server

environment.

FIG 3 is a block diagram of a preferred agent terminal or in recognition to the above, a client environment, which can be located at the freight agency or even at a private home, or any establishment having the authority to lend itself to this network. As discussed there can be a number of agent terminals 30 linked to the

5   one central controller 20 with each having the proper but different access authorities. Like the central controller describe above, the agent terminal 30 includes a CPU 31, ROM 32, RAM 33 and a clock circuit 34. The agent terminal 30 also include a communication port which interfaces with a modem 36 that facilitates communication between the agent terminal 30 and the central

10   controller 20. Of course instead of a modem 36 other communication devices can be used as shown above for the central controller 20. A standard computer such as an IBM PC, Apple Macintosh, running appropriate custom designed software may be used as the agent terminal.

15   The agent terminal 30 also includes an input device 40 to receive input from an operator. Any of a wide variety of input devices would be suitable including touch screen, mouse 41, keyboard 40. The input device 40 may interface directly with the CPU 31 as shown in the figure. Alternatively an appropriate interface circuit may be placed between the CPU 31 and the input device 40.

20   The agent terminal 30 also includes a video monitor 39 for conveying information to the operator/user. The most preferred video monitor 39 is a LCD, LED and thin film transistor panels. A video driver 38 interfaces the CPU 31 to the video monitor 39 (or to any other type of video display device). The agent

terminal 30 also includes a data storage device 37 in which transaction processor instructions 37a are stored. These instructions can be read by and executed by the CPU 31 thereby enabling the CPU 31 to process transactions.

5   FIG 4 is a flow chart depicting the initiation of a transaction-using agent terminal 30. The steps of the process shown in FIG 4 may be implemented in a computer program that may be installed at the agent terminal alternatively as said, the terminal at the user level is merely a "dummy" console having access to the server at Central Controller 20. In fact, the computer program which is

10   basically an query interface between User 30 and Cargo system 10 be installed at the Central Controller 20 from a computer readable medium and then stored therein in one or more of the ROM memory 22, RAM memory 23 and data storage device 27 for access and use by agent terminals with authority as required. The program described here is to enable an option price to be

15   calculated. It is important to consider that the significance here is not just in presenting an option price to the user but to allow this price which is attached to a air-cargo facility to be freely traded in an exchange environment. In short, the user may purchase this option and do nothing, purchase and again offer it for sale in the same system to others, purchase and exercise it later.

20   The process starts when a customer contacts a carrier provider such as the Singapore Airlines or its agent in step S1. Alternatively, a registered user can access it through the ISP Gateway 6 by using browser program by applying the command http://www.optionsys.com which will get connected to the central

controller 20 (provided at that time the central controller 20 is connected to the

ISP Gateway 6 as well) and where possible mirror sites are available for faster

access. The customer selects the course information in step S2. This information

comprises mainly of two components: the date of departure and route criteria.

5   The date of departure criteria defines the time when the route is scheduled to

begin. The route criteria refers to the actual route the customer is seeking to

reach say from Sydney to Singapore, non-stop, plane type, size and weight, time

of arrival, urgency, once a day etc. Such requirements may be different from

carriers to carriers and indeed from customers to customers. The route

10   information is entered by either the customer or by an agent, into the agent

terminal 30 in step S3. Customer data such as the customer's name, address, and

telephone number, handle if any, may also be entered into the agent terminal 30

in step S3. The route information and the customer data are then transmitted to

the central controller 20 in step S4. The Central Controller 20 upon receiving

15   this information will sent a simultaneous request to Cargo System 10.

S4 also includes the step where corresponding information matching the

criterion by customer/user data are requested from Cargo System 10 and are

received.

20   Returning to FIG 3, each of the steps S1-S4 described above are executed by the

CPU 31 which is executing transaction processor instructions 37a stored in data

storage device 37. The communication with the central controller 20 takes place

via the communication port 35 and modem 36 or as the case may be, with

Internet 5 through ISP Gateway Interface 6.

FIG 5 is a flow chart of the operation of the central controller 20 after receiving

5   of route information from the agent/user terminal 30 and corresponding

information from carrier cargo system 10. The steps of the process shown in

FIG 5 may be implemented in a computer program that may be installed in the

central controller 20 from a computer readable medium and then stored therein

in one or more of the ROM 22 , the RAM 23 and the data storage device 27

10   (shown in FIG 2). The central controller 20 calculates the price of an option in

step S10 based on the route information received from the agent terminal

together with information from the option database 27a and data received from

the Carrier cargo systems 10 including those linked to the Flight Reservation

System 11. The point "A" refers to a particular Flight Reservation System.

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When the route information includes similar routes being offered by the various

carriers, the price of the option may be simply the lowest price from a set of

individual options unless the customer specifically ask for the unique carrier. As

the case may be, prior entities including users who have purchased options

20   having indicated their willingness to sell a similar option at a price of their

choice, this options and the selling price will be submitted and displayed to the

user at the same time. All options offered should be covered.

Expanding the case for **air cargo**, the calculation of the option price may be determined by multiplying a series of factors as refined from time to time which will affect the value of the options. The main deciding factor is the loading capacity (LC) of the chosen carrier, which may be a fraction of the price for

5   which the option is being purchased for example 18 percent. Generally the fraction will decrease as the service-route fees for which the option was purchased approaches the full price or near the expiring date. There are according to this invention many ways of calculating the value and as such these methods are only for demonstration purposes. In the final product, a

10   combination of a few of the methods will be applied. In the final analysis, those most responsive will be adopted and refine while those which are not will be abandoned.

The following includes the main variables used.

15   LC   A base factor relating to loading capacity from passengers booking/reservation list for the scheduled flight. If the scheduled flight is more than a year, then check old records to compare with minimum based rate of 0.13 Adopt which ever is higher.

	less than 1/3	0.18
20 Loading capacity of	greater than 1/3 less than ½	0.40
the carrier chosen	more than ½ less than ¾	0.67
for this contract	more than ¾ less than 5/6	0.78
	greater than 5/6	0.95

25   For LC more than ¾, D will be 1.0

D   A factor relating to the number of weeks before departure. In this example D increases as the number of days increased

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1 week	1.0
3 weeks	1.2
4 weeks	1.5
>4 weeks	1.8

10   For LC more than ¾, D will be 1.0

L   A factor related to the expected cargo space on the subject route. In this example, L increases as the expected demand increases, typically we

15   assume that route such as from London to New York has a higher demand than others.

High Demand	1.2
Medium	1.0
20 Low demand	0.7

C   A factor relating to the loyalty of the customer. For example, a customer

who has shown a track record in the past following some loyalty programs will

be regarded as excellent, a customer who has no record of any dealings with this

carrier at all will be considered a low status.

5   Excellent   0.7

Good   0.8

Average   0.9

Pass   1.0

Low   1.1

10

R   A factor related to the flexibility of the customer's route plans.

For example, a customer who is willing to consider other routes or a later flight

is considered as flexible.

15

Flexible   0.7

Not Flexible   1.1

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V   A factor relating to the historical volatility of freight cost/fees. In this example, V increases as price volatility increase as measure in standard deviation terms or SD increases. This takes into account the seasonal high-lows.

5   Changing by more than 9 percent on a year to year basis   1.3

Some Changes of up to 8 percent on a year to year basis   1.1

Stable No Changes   0.8

W   As per our space cargo example, launching of a space shuttle or

10   rocket can only be done during good weather and hence this plays into the equation as well. Hence the same way for any time of cargo schedule, weather is an important since flight cancellation means income lost.

Forecasted good weather at date of departure   1.1

15   Forecasted normal weather at date of departure   1.0

Forecasted bad weather at date of departure   0.9

T   T signifies the timing. That is whether it is within school holiday or not. This is because if the period is during holiday, then in our air cargo example,

20   more people will be flying hence less space available in the cargo for non-passenger cargo. This however is a question of management policy and may be different with each carrier. Some may elect to put more flights knowing that there is greater demand and hence compensate the space availability.

T is assigned   1.2   for holidays

T is assigned   0.95   for other days

5   Q   signifies the type of cargo being carried such as whether it is perishable or otherwise.

Q is assigned   1.2 for perishable

Q is assigned   0.95 for non-perishable

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A   signifies the plane type. For example, in a large aircraft such as a Jumbo, there is more room for cargo

A is assigned 0.9   for "Jumbo" types

15   A is assigned 1.0   for mid-range planes travelling short distance.

CO refers to the number of competition on the same route within the same time frame of 48 hours.

20   CO is assigned   0.86   when competitors amount to greater than 3

CO is assigned   0.92   when competition is less than 3

Using these variables, a suitable algorithm for calculating an appropriate option price is as follows:

Option Price for AIR-CARGO example = LC*D*L*C*R*V*W*T*Q*A*CO

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It should be mentioned that conditions and changes may be made to the above formula from time to time to reflect changes in the environment. Similarly, option pricing for space, land and sea cargo options will also be different since for example in space cargo, there is really no "passengers" yet so the factor T

10 which refers to holiday or non-holiday period has no meaning. The above is only an example for demonstration purposely. More sophisticated and refined formula shall be used to arrive at a suitable option pricing model. Once the option price information has been calculated as shown above, it is transmitted to the customer in step S11 as per FIG 5

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As an example, assume a customer wants to purchase an option for route Sydney to London base fee at USD 10,000 for 100 Kg (this standardisation should be the same for all contracts). Further assume that the particular flight as queried has passenger capacity (LC) of less than 1/3 hence (0.18) with departure

20 date is 5 weeks from now (1.8), the route has a medium demand (L) of 1.0, he is a loyal customer (C) 0.7, he is not flexible (R) 1.1, the service fees standard deviation is stable (V) 0.8, weather is forecast to be normal (W) 1.0 and timing is not within the holiday session (T) 0.95. The cargo is non-perishable (0.95) ,

the type of plane is a Jumbo (0.9) and there is no competition (0.92). The base

option price is USD 10,000 *0.18 =USD 1800 and the final option price from

one particular carrier is USD calculated as follows

5   1800*1.8*1.0*0.7*1.1*0.8*1*0.95*0.95*0.9*0.92= USD 1491.43

After the price information is transmitted to the customer in step S11, the

customer decides whether to purchase the option in step S12. If he decides to

purchase the option, the system can process the sale by billing the customer's

10   credit card/account in step S13. Of course, alternate methods of payment may be

used instead of a credit card, including payment by cash, credit, check, debit

card and the like each consistent with monetary value equivalent to the above,

as long as it is before the departure date or expiring date of the option. If the

customer decided not to purchase an option during step S12, the customer is

15   given a chance to revise the route information in step S15 or exit or input his

own bid S17 or scan other bid/offers S16. It is important to recognise that this is

an option exchange where there are options being sold by other entities other

than the carriers. However what is more important is to recognise that carriers

being members of this exchange when called or queried to make market, these

20   carriers shall oblige and hence only then an exchange can exist. Entities other

than carrier members create liquidity in the exchange by taking varies open

positions. They are required to deposit a certain amount of margin before

allowing to operate in this electronic exchange. Options are made transferable

so to ensure these values are properly priced. All information pertaining to the particular option is shown so other interested parties should be aware if there is any special peculiarity. By default all options contract should be standardised within the meaning that they are exchangeable within all participating carriers.

5   However, the business reality is that it can never be exactly the same. Carriers often try to distinguish this point in their service, for example. For the purpose of this exchange, the meaning shall take the form of a higher degree of tradability.

10   Furthermore, by manipulating the plans, the customer may be able to find an option that is suitably priced. He may also wish to put in his own bid S17 and let carriers that may be interested to make an offer or other options buyer may be interested to sell to him based on the above requirements S 16. The system is designed to be flexible so that there is liquidity in the market to allow

15   transactions to take place. He may also scan/search other offers by covered or non-covered option writers who are willing to sell a similar option if he is still not satisfied with what is available to him by the central controller 20. The credit card transaction may be carried out by the central controller 20 or by the agent terminal 30 with all records updated instantly. Transactions processed

20   through the agent terminal 30 may be carried out using the same modem 36 that is used to communicate with the central controller 20. Alternatively an additional modem (not shown here) may be included in the agent terminal 30 to process the credit card transactions. Alternative the normal credit merchant

account may be used to facilitate the transaction. After the sale is completed, the option database (27a in FIG 2) is updated in step S14 to reflect the fact that a particular option has been sold. The number of cargo options sold for a particular carrier including or excluding passengers seats may be used by the

5   system as a factor in determining the option price to be sold in the future, for example LC. More specifically, when the number of options outstanding for a given route rises, the price for subsequent purchase of similar options may be raised to compensate the carrier for the additional risk up to the point of the maximum capacity it can hold. In oversold position, carriers may have to

10 purchase back these options to avoid adding another flight. Alternatively, clients may wish to purchase from another carriers or market sellers. In undersold positions, carriers may wish to purchase put options written by external parties. This is effectively a position where such parties are willing to pay only up to a certain price for such a service. For example a put position means selling a

15 position to use a carrier services upon exercised by the carrier. Upon exercise of these put options, the writers/sellers have to purchase these contracts equivalent to the amount of KGs. For example, say the current rate is $10,000 and the put seller is willing to sell one contract for 100 kg at $2,000. The carrier upon buying it pays $2000 to the put seller and upon exercise, the put seller will need

20 to pay the remainder $8000 instead of $10,000 so effectively a discount of $2000 was given.

The customer database (27b in FIG 2) may also be updated to indicate that a particular customer has purchased or sold a given option. This customer database may be used for various purposes including billing, messaging and marketing particularly using Internet based technology such as electronic mails

5   subject to authorisation by the customer.

FIG 6 is a block diagram depicting operation of the system when a customer exercises an option. The steps of this process may be stored on a computer readable medium, which in this case would be the data storage devices 27 and

10   37 (shown in FIGS 2 and 3). First, in step S20, the customer contacts the freight cargo agent and indicates that he wishes to exercise a previously purchase option. Alternatively, the registered user may try to access through the ISP Gateway 6 into the Internet 5 to link into the central controller 20. After the operator of the agent terminal 30 enters the information describing the option

15   and customer details, the agent terminal 30 transmits the option exercise information to central controller 20 in step S21. The central controller 20 then confirms that the option contract does in fact exist and is current (not expired) as shown in step S22. The central controller 20 also informs the cargo system 10 that this option is to be exercised and as such it is crystallised to a contractual

20   facility and hence obliged to complete its part of the contract by taking delivery of the cargo at the previously negotiated price. The customer's credit card is then billed for the facility specified by the option being exercised in step S23. The specifics of charging the customer for the route are similar to the specifics

of charging the original purchase of the option. The option database 27a in the central controller 20 (shown in FIG 2) is subsequently updated to show that the option has been exercised as shown in step S24.

5   FIG 7 is a block diagram depicting operation of the system when a customer wishes to sell an option. The steps of this process may be stored on a computer readable medium, which in this case would be the data storage devices 27 and 37 (shown in FIGS 2 and 3). First, in step S25, the customer contacts the freight agent and indicates that he wishes to sell a previously purchase option for the

10   particular route. After the operator of the agent terminal 30 enters the information describing the option and customer details, the agent terminal 30 transmits the option information to central controller 20 in step S26. The central controller 20 then confirms that the option contract does in fact exist and is current (not expired) as shown in step S27. The information pertaining to the

15   sell is displayed for all to see S 28. The central controller 20 will search the database 27a and match any ready bid for the option S 29. If there is a match, then it is sold and the seller be credited and buyer be billed S30. Option database will be modified to show the change of ownership and obligation S31 otherwise unsold option will be stored until sold or expired whichever come

20   first S30.

FIG 8 depicts the format of the World Wide Web interface format. With this availability, any qualified person may access the central controller 20 through the Internet 5 by using ISP Gateway 6. While it is freely available to the public,

as shown here, functional access is still very much controlled by central controller 20.

While the above description contemplates the creation, buy, sale, transfer of an option with a fixed expiration date at a particular price, alternative pricing configurations may also be used. After the respective carriers issue an option, they can reserve space in the route covered by the option, and cancel the reservation when the option expires without being exercised. For air-cargo, the options shall expire 6 hours before the schedule departure so it gives time for the carriers to make final adjustments.

Alternatively, they can do nothing until the option is exercised, and at that point reserve the customer's requirements as per the contract made. If this result in overbooking, then the carriers will need to re-arrange some of its schedule to accommodate the contracted air cargo. The control is always with the provider of these services since they are the sellers of these options. That is to say, they can limit the remaining space for a particular route when it is near capacity by raising the price of options. What is more satisfying here is to recognise the option facility here is an hedge against rising cost of freight fees for users, provide some market forces to determine its pricing, help to secure profits for these providers and to plan for resources allocation.

Industrial Application

This system according to the invention possesses several advantages over existing arrangements in reducing the cost of funding and improves the cargo intake in targeting the right users. It also attracts more audience by

5   providing incentives such as discounts (discount here refers to the cost of money over time) or at least by locking in the cost of freight services. This may not be so significant now but as the technology evolved, there will be opportunities for would be users to tailor all their requirements with the carriers' systems to give a complete service cycle. The increased network economy means such design

10   will enhance knowledge gathering including transparency and decision making for the carriers and their customer reducing any wastage and inefficient. Unlike traditional method of income for carriers which uses a deferred billing system, guesswork and inputs from sales dept, the up-front premium is an easier and less intrusive means of securing funds. It will also allow they to make a more

15   informed decision about the potential clients' interest and plan for their coming. Furthermore, this structure is much more cheaper and less administratively consuming. As this is an interactive and automated system with minimal human intervention, the users will always have control and can determine when they can buy/sell, how much to take and when to stop. There will be some form of

20   control within the system design to prevent abuse such as those found in the stock market. This invention is designed to be scaleable and without much mechanical moving parts will be robust.